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The "agonizing reappraisal" of paperwork operations

Scientific Records M

► This may come as a shock. Bound by gentlemen's agreements among various staff groups, there is as yet no finger pointing at the obvious:

Why are there more labor-saving devices —and yet, more clerical employees than ever before?

Why are there more cost reduction, work simplification and general "efficiency" programs—and yet, clerical costs are higher than ever in most organization budgets?

This, at a time when the number of procedures analysts and industrial engineers is likewise on the increase.

Within the restricted confines of the systems profession, it seems appropriate enough to analyze in private what is bound to become a public scandal.

Standards

When we first began to release the initial standards that formed the base for scientific records management, we felt sure that the "rising tide of paperwork" would begin to ebb. After all, we could now tell business management that:

1. 65 cents out of every dollar spent for paperwork was wasted.

2. Each company was creating or processing at least 2,000 pieces of paper for each employee on their payroll every year.

3. At least 40% of all records could safely be destroyed as obsolete.

4. Another 25% could be transferred to low-cost storage.

5. These standards are equally applicable to government and industry—and only a small portion of total records accumulations can be placed at the door of legal requirements.

This interested a number of companies and we started to make a dent in the volume of records being created and maintained—but nothing changed the over-all picture of paperwork production. Well, we thought—maybe our presentation is a bit too theoretical. We will translate these abstract standards into tangible returns. The average manufacturing concern of, let us say, 1000 employees should:

1. Have no more than the equivalent of 620 file drawers of records in the office and storage.

2. Retain only 290 of these in the office.

3. Store the less active records at a total cost of $363.80 a year.

Arthur Barcan is the executive director of the Records Management Institute, in New York.

by Arthur Barcan

s Management

4. Utilize 464 square feet of space in the office and 66 square feet of storage space.

5. Limit the vital company records to less than seven file drawers.

6. Protect them by new techniques at a cost of one-half cent per document.

Compare this with what the average business with 1000 employees still does:

1. Has over 1030 file drawers in office and storage—a surplus of 40 per cent that highlights creating, filing and maintaining 512,000 pieces of paper unnecessarily.

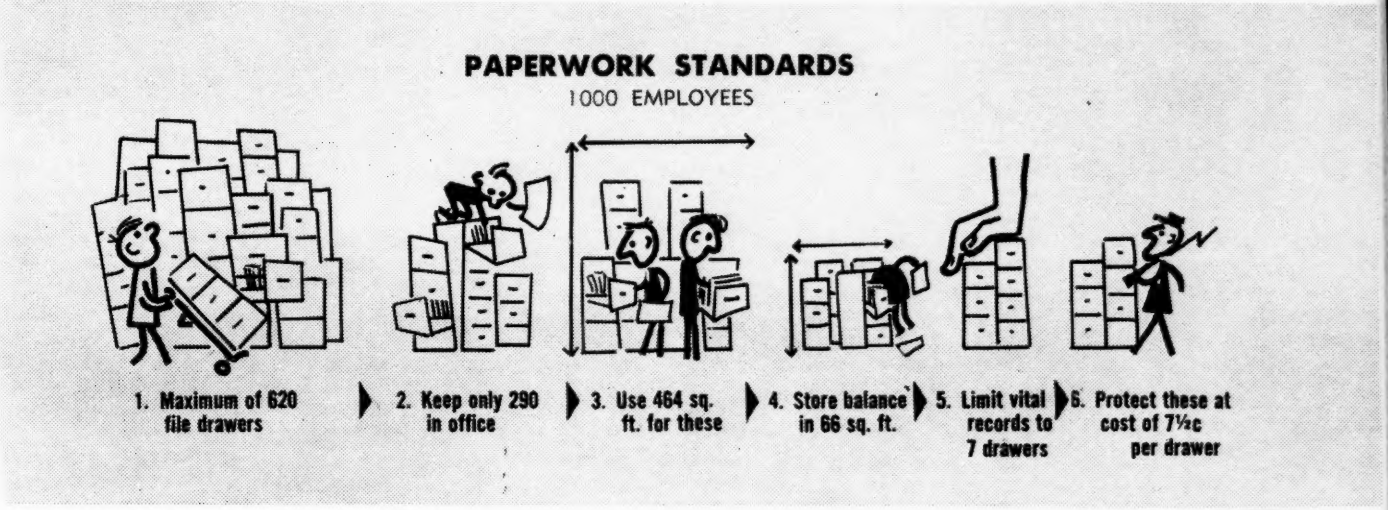
2. Retains over 700 of these file drawers in the office—more than double the standard.

3. Stores the less active records at a total cost five times the standard.

4. Utilizes twice as much square footage as the office standard and five times the standard space for records storage.

5. Has no vital records protection at all or has gone overboard on moving them out of town or filming them so that the document protection cost rises three times the standard up to 1.5 cents per document.

No wonder the 65 per cent waste in paperwork costs is consistent, continuing and avoidable. The fact is that companies are increasingly ready to admit that there is too much paperwork, that costs are too


PAPERWORK STANDARDS
1000 EMPLOYEES
1. Maximum of 620 file drawers
2. Keep only 290 in office
3. Use 464 sq. ft. for these
4. Store balance in 66 sq. ft.
5. Limit vital records to 7 drawers
6. Protect these at cost of 7½c per drawer

continued

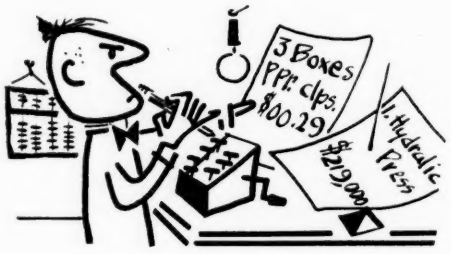
high, ad infinitum, ad nauseum and "ad to the number of memos on the subject." While professional standards may blast complacency and even evoke action, the standards *per se* are not automatic cures. The standards can only highlight whether there is a problem, what action may be taken, and "what is in it" for management. *This area has become so highly developed that an analysis can be conducted and results achieved within 1 to 2 days!*

Pitfalls of Paperwork

If ignorance of scientific standards has prevented organizations from knowing just how healthy (or unhealthy) their records really are, then past "sacred cows" have mesmerized companies into believing that they are about as streamlined as they can be (or at least as streamlined as similar companies in their industry—a case of mass hypnosis).

Let us examine just three of the "Seven Sacred Cows" * that have managed to create this costly and undeserved complacency.

1. Personnel and Paperwork. The first factory workers who would attempt to keep parts of the assembly he was creating as a sentimental reminder or "in case some one asked" would end up discussing it with plant security. On the other hand, our office worker automatically "participates" by retaining a copy of each of his products (letters, reports, etc.) and is equally adept at retaining copies of the products of others as well.



2. Quality and Paperwork. Quality in the factory is a complicated balance of tolerances and sample inspections: Q.C. constantly weighs engineering pressures for accuracy against production pressures for shipments and against the "old man's pressure" for net profit. On the other hand, office administration blithely assumes its impossible standard of 100 per cent accuracy; regularly superimposes layers of formal and informal inspection to reduce errors; unquestioningly checks every bill, whether for $5 or $50,000, with the same painstaking detail.

3. Common Sense and Paperwork. This is the Do-it yourself technique based on the flippant assumption that common sense can tackle all problems, if bolstered by three articles on forms control, two sessions on filing, and a dinner meeting on electronic data processing. Certainly, nothing has managed so well to keep paperwork operations in semi-efficiency and deserved disrepute. There are eight basic filing systems and hundreds of variations of the theme; there are dozens of "canned systems" for purchasing, invoices, etc.; there are innumerable articles on records retention or vital records protection. Are all these areas for selection by intuition and common sense? Common sense is a valuable asset. Like a sense of humor, nobody admits to being without it. It is also invaluable in engineering, law and medicine, but we certainly do not attempt to practice these pro-

* "Seven Sacred Cows of Clerical Routine—Do We need Them?" *Office Management*, June and July, 1956.

fessions on the strength of common sense alone.

Techniques

Just to get the cliches out of our system, we all start out agreeing to favor motherhood, oppose sin, treat causes rather than effects, and admit that the above "sacred cows" exist in Joe's office or in other companies, but never in our own. The fact is that past anti-paperwork crusades made up in fervor alone what they lacked in direction or professional evaluation. Scores of people have been sent running around to ask, "who, what, when, where, why, and how"—and then continue unprepared to interpret the answers they receive. Companies have embarked on cost reduction without knowing exactly how much clerical operations were actually costing.

The fact is that there are a number of excellent techniques to augment the scientific standards. One example may explain how we go from the general to the specific in an area like record keeping. In company A with 10 employees in the purchasing department, we find 54 file drawers of records in office and storage. Applying our standards, we know that at least 23 file drawers (or 46%) are excess. The pinpointing of exactly which records are vulnerable will be determined by the reference analysis as well as the legal requirements—neither is a subjective matter of opinion or "common sense."

Experience indicates, for example, a different usage pattern in a reference analysis for different types of records. Cancelled checks are a "sudden death" item, with immediate high usage until reconciliation and then a steep drop until audit time; records of terminated personnel do not show a steep drop until 6 weeks after departure; vouchers tend to hold up high until 6 months after payment. Again, while these are generalized patterns, the exact usage story for each record would be revealed under reference analysis.

There are equally valuable techniques for analysis of filing systems, correspondence, or of paperwork processing in specialized records systems (i.e., purchasing, sales, personnel, and production control).

Underlying these techniques, however, are two basic principles that require renewed appreciation and support for effective paperwork controls:

1. The Economic Tolerance Level. Before manufacturing a product, we carefully consider which materials to use or which package to present in terms of total cost, estimated profits and customer acceptance. The same disciplined framework must hold true for the office. Why haggle over "make or buy" on a $2 spare part and then accept a $2.20 to $18.50 cost to process the purchase order? It is ceasing to be heretical to say, "What we need is a good eighty cent procedure. Let us see what we can buy for it and where it would be applicable." The clerical overhead cost runs at least $400 a year for every employee in the company. Until now, clerical processes have enjoyed deferment from the rough-and tumble debates on break-even points by getting lost in the general overhead. Similarly, creation of records and reports has enjoyed the luxury of general streamlining and vague costing without the critical balance against value received.

2. The Exception Principle In Paperwork. If last year's words were: I.D.P., this year's promises to be: exception principle. Any way you define it, it provides a firm base for our new area because we have already applied it effectively to differentiate between: routine and policy material; internal documents and outside correspondence; quantity purchase requisitions from material control and sundry requisitions from all over the company; orders fulfilled in one shipment as against the "stretchout arrangement." In all these cases there is no

continued

question that both alternatives (plus further exceptions) exist. The job of effective analysis is to indicate what proportion of each operation is a job that is significantly different so that it can be handled as little, as simply and as quickly as possible. The sad truth is that in paperwork operations, with the possible exclusion of payroll procedures, the exception principle is not only an exception—it is a downright outcast.

Conclusion

We started this discussion confronting a number of paradoxes. Let us face up to one more. In an era of rising sales, net profits are consistently lagging behind. This is uncomfortably related to rising costs generally and to clerical costs in particular, the largest single maintenance budget item.

In these days, when each staff unit would like to report to the president, we have a subject that is already on the president's agenda. That minimum $400 clerical overhead cost per employee per year put it there. That desire for prompt, effective—but minimum—reports to management keeps it there.

Scientific records management now talks to top management in universal terms: The cost, quantity and quality standards for records and reports translated into tangible service and savings and available to management in a matter of days. **s/p/a**

"Four Ways to Produce a Procedure Manual," C. C. Crawford, *The Office*, June 57.
Discusses methods of obtaining a procedure manual: 1) lone wolf company author, 2) professional writer, 3) cost-reduction workshop, 4) standard operating procedure. The standard operating procedure approach is recommended; it is a manual written by those who use it.

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by Lem F. Thom

Where Should A Systems Activity Be Placed?

► Management opinion is divided concerning the proper and desirable organizational placement of a systems and procedures activity. It is further divided concerning the most effective method of approach that a systems group should use. Regardless of the many merits of the various opinions held, it is always prudent to lean on the crutch of experience even though at times it may be an exacting and unorthodox teacher.

In the Engineering Department at Convair, the systems and procedures group is

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Organization and method of approach can enable an activity to operate effectively if a combination of both generates good human relations.

organizationally placed under a Chief Draftsman. This individual reports to a Chief Administrative Engineer, who is under an Assistant Chief Engineer. He, in turn, reports to the Chief Engineer who is the head of the Department. Under this organizational concept, the systems and procedures activity functions as an intra-departmental component as part of a line organization, i.e.: the Engineering Department. This provides a "built-in" capability for developing and installing systems and procedures within the department.

This type of organization produces the following benefits:

(1) The systems and procedures group is a part of the major functional area in which its work is primarily concerned.

(2) Systems personnel are better able to perform their work as they are members of the same team striving to achieve the same objectives, i.e.; better and more efficient engineering work performance through more effective systems and procedures.

(3) The intra-relationship of the systems group and other activities within the same department produces a closer affinity with work problems and helps to gain better coordination in presenting acceptable recommendations.

(4) An understanding of operating problems is gained by the systems people and helps to provide them with an "operational insight" in developing and installing new or revised systems and procedures.

(5) Better communication and working relationship result as line personnel tend to look upon the systems group as part of their team, and also as a "housekeeper" who is "on call" to help them better manage their operations through better systems.

This list is by no means all-inclusive. But it does show the benefits that we have derived from placing the systems group within the department that it services.

However sound an activity may be organized, its *modus operandi* ultimately determines its effectiveness. The next consideration was to develop the most effective method of approach to be used by the systems group. This we did in the following manner:

(1) The organization chart of the Engineering Department was divided into major functional groupings. For example, design, flight test, research and development, and administration.

(2) The number of analysts was divided and assigned to one or more areas so that all major functional groupings were covered.

(3) Responsibilities, with commensurate authority, were given to the analysts for providing systems and procedures services to the assigned areas.

We found that, with this method of approach, the following advantages were gained:

(1) The analysts obtained a more intimate knowledge of the problems and people involved which, in turn, helped to develop, recommend, and install systems and procedures.

(2) The "operators" tended to look upon the analysts as their own personal advisors.

continued

This tended to foster closer working relationship between line and staff, particularly when the staff is a segment of the line.

The organization and the method of approach described herein helped to "sell" systems and procedures more readily to the operating personnel. The placement of the systems group shows it as a line activity but it functions as a staff component. This removes the systems group from becoming apathetic towards the "operators" and minimizes the latter's traditional attitude of antagonism and resistance to change. The systems group is more readily accepted since it is part of the line. It is looked upon as having experience "on the firing line" rather than "long-haired staff theoreticians" who are trying to impose innovations to operating problems about which they know nothing.

The experience gained thus far has been encouraging. Whether the placement of a staff function in the chain of command follows good organization practices may well be debated among management experts. But it does show that the proper placement of a staff activity is not relatively important if the organization and method of approach used are conducive to fostering a climate of good and healthy human relations.

What has been attempted here is not to show that good organization should be built upon the application of accepted mangement principles. But rather an attempt to show that the *organization* and method of approach used can well enable an activity to operate effectively if a combination of both generates good human relations. Perhaps further research may well revise current management thinking and result in the formulation of new organization principles based on the *human relations approach* which has been emphasized but never wholly applied in organization. **s/p/a**

Your procedure .

► John Herndon was talking, and he wasn't complimentary. He said: "Of all the breeds of business writing that I've run across, I think your procedure writing is about the dullest, the hardest to understand . . . the most extreme form of gobble-de-gook!"

Those were harsh words, but since the man was a general manager of Herndon, Incorporated, maybe I could learn something. I thought I'd better listen. "Mr. Herndon," I said, "maybe you are right. Maybe procedures aren't the easiest thing to read. But don't you think members of management want it that way. Don't they encourage what they call business-like writing?"

Mr. Herndon grunted and said, "Maybe some diehard managers want it that way, but I think most people never give it a thought. Procedures have always been dull. They don't expect anything else. If you systems fellows assume that people want dull procedures, of course, your procedures will *be* dull.

"But I think you procedures men should

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by Leslie Matthies

. . . *Write it so your reader can understand it*

improve your procedures. You should develop a more readable style . . . and offer that style to management.

"What's more important", Mr. Herndon continued, "if you do turn out a readable procedure, the boys down the line, the people who do the work . . . are more likely to understand what you write, and if they *understand* it, there's a better chance that they will follow it."

Mr. Herndon certainly let us have it, didn't he?

Offer A Better Style

I felt that Mr. Herndon was right; that, if *we* procedures people don't develop a better style there just won't be any improvement.

As every procedures man knows, the operating people don't always follow procedures. Part of the reason is that Joe Worker just doesn't understand procedures gobble-de-gook. And he won't strain to understand. So, if we *can* achieve a simpler style, we should not only please the boss, but we should actually increase the likelihood that the operating people will follow our procedures.

Mr. Herndon showed me an example of what he called procedure gobble-de-gook. He said, "If you can understand that in any less than five readings, you're a good man."

Here's the passage: "*Overhead applied* on the analysis of labor roll summary by expenditure classification (S and A Form 985) on charges for the applied 17% or direct labor (regular time) is the column caption where the charge is to be reported, and a corresponding credit should be reported in the column captioned 'overhead applied' opposite expenditure account 804 and allotment number (furnished by the management office) on the S and A form 985 submitted for the major annual maintenance appropriation of the activity which is performing the work."

I read that passage once. I read it twice. Then, I read it the third time. Even after the fifth reading, I don't know what it means. And quite honestly, I don't think the writer himself really understood it. I think he confused himself.

People Can't Follow Rules They Don't Understand

The only possibility of getting some clerk to follow such obscure instructions, would be to supply a well-designed form that a man could fill in correctly without having to look up the procedure. The man who wrote that "overhead applied" passage had his initials on a group of procedures in Mr. Herndon's book. I glanced through some of them. The man was fond of such words as:

cognizance origination expenditure
expeditious maintaining certification
prescribed indoctrinate conformance

continued

That writer loved big, obscure words. He liked long, complex sentences. He enjoyed twisting those sentences clear out of their natural order.

There is no hope for the writer who doesn't *know* that his writing is poor. Maybe the writer in our "horrible" example was happy with his gobble-de-gook passages. But in your case, and mine, let's say we agree that *our* writing techniques can be improved. How can we write more effectively?

Too Much Perfection

The minute we ask "How can I improve?" we must be alert to avoid a common trap. There are many books on how-to-write. Sure, there are college courses and night school courses on "better writing." There are lots of articles, too. You've read them, haven't you? What did you do? Nothing? Sure, nothing. Why? Do you know why?

The answer is that the book, the article, and the class tried to improve you too much! The all tried to convert you in to a perfect writer. They aimed to make you a Shakespeare. Here's a book that throws fifty or sixty rules at you, with lots or examples. The author tried to insure that you'd write "undying literature."

But you don't want to write undying literature. You just want to tell a man what to do, and when to do it. You want to write a procedure that a man can read, understand, and follow.

Are there some simple rules to better writing that you can put to work tomorrow? or this afternoon? Yes, there are such rules. If you'll be happy with an 80% improvement, you can apply three simple rules tomorrow—and *get* that 80% improvement.

Let's look at our *three simple rules.* Then let's apply those rules to a typical procedure example. The three rules are *short sentences, simple words, and straight order.*

Now let's select a typical systems passage and put it on the operating table. This following passage isn't too bad . . . at least you can understand it with a couple of readings. Here it is:

"It is the responsibility of each individual having classified documents in his possession to determine that each document has been assigned a control number and that all documents irrespective of date are channeled through the cognizant control center when they are to leave his possession to determine that each document has been assigned a control number and that all documents irrespective of date are channeled through the cognizant control center when they are to leave his possession for re-assignment outside his control center area."

This passage actually appeared in a procedure on classified documents. Let's apply our three rules one at a time. First, we'll try the shorter sentences, then the simple words, and finally the straight order.

Short Sentences

Before you can break a long passage into short sentences, you've got to extract the different ideas. The first idea seems to be: Each individual who has a classified document is to make sure that it has a control number. The second idea: If a person wants to send or give the document to anybody in a department that has a different control center, he is to channel the document through his control center first.

Now let's put those two ideas together again, making only one change from the original passage. We'll just write it in shorter sentences:

"Each individual having classified documents in his possession determines that each document has been assigned a control number. All documents irrespective of date are channelled through the cog-

nizant control center when they are to leave the individual's possession for reassignment outside his control center area."

Does that last passage seem to be a shade or two more readable than the original? Have we made progress toward readability—just a little? I think you'll agree that it is more readable.

Simple Words

Now let's substitute simpler words. *Paper* for document. *Person* for individual. *Makes sure* for responsibility and determine. *Has* for possession. *Of any date* for irrespective of date. *Go through* for channelled through. *Man's control center* for cognizant control center. We will drop entirely the words "possession" and "reassignment."

O.K. now let's apply the second rule: use simple words.

"Each person who has classified papers makes sure that they have control numbers.

"All papers, of any date, go to the man's control center clerk when they are to go to someone who works in an area covered by another control center."

Is it getting still clearer? Isn't there less mud in the water?

Straight Order

O.K. let's apply the third rule, the straight order. To make this change we re-arrange the order of the words in the sentence:

"See that each classified paper that you have has a control number. If you want to send a classified paper to someone who isn't in your control area, give it to your control center clerk first."

Do you see what we mean by "straight order?" We will explain this rule fully in just a minute. But first let's ask you, is the last example more readable than the original . . . than the first example? Doesn't the application of these three simple rules make the passage much clearer? For contrast, now go back and re-read the original.

"Straight order" in a sentence merely means naming the subject, action, and object, in that exact order. You may remember the first-grade approach, perhaps the little red hen story.

Subject	Action	Object
HEN	FOUND	SEED
who	does	what

The order in this red hen sentence is "straight." *Who* are you talking about? What *action* did he take? What *effect* did it have?

In this primitive but clear sentence, the author wanted to describe the hen a little more than just a plain hen, so he added the words "The little red . . .". The passage then went like this: "The little red *hen found* a *seed*."

I've italicized the key words, the words that really make the sentence go. The other words are modifiers. Notice the straight order; subject first, verb next, then object. Hen . . . found . . . seed.

The four words "The, little, red, a" all are modifiers. Too many modifiers muddy up the meaning of your sentence. Be careful of modifiers. Hold back on them.

Sentences Should Match

The "red hen" author then added a second sentence that has a fine lesson in it. Here are the two sentences:

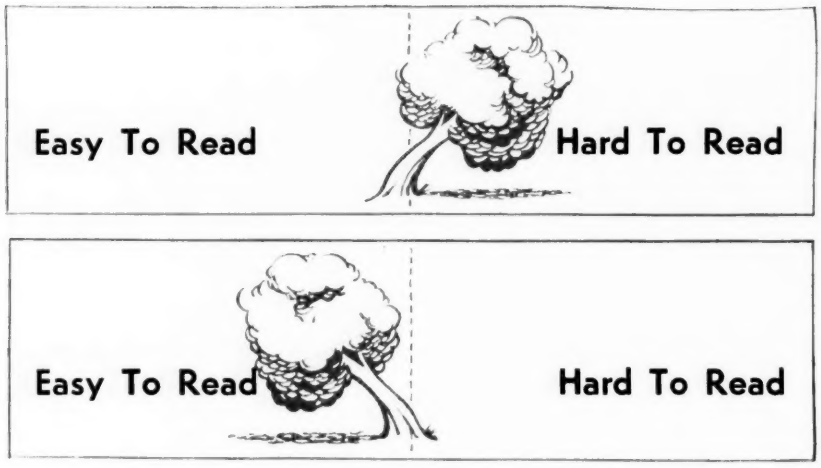
"The little red hen found a *seed*.

It was a wheat seed."

Now we've outlined two important words, one in each sentence. "Seed" is the object of the first sentence. "It" is a pronoun that means "seed." Notice how the two words tie the sentences together, words that match, like dominos.

If you and I wrote like that in grammar school, we started out o.k. But somewhere

continued



Overcorrect
A Bad Habit

along the line we picked up some bad writing habits, maybe in college, maybe in business. At any rate the habit of businesses and systems writing took years to form. Your habit tree, and mine, is bent in the direction of being hard-to-read.

If we want to correct an undesirable habit, sometimes we have to *over* correct, to bend the tree too far in the opposite direction. *After* the simple writing habit is a part of a man, then, and then only, can he string his thoughts together for smoother flow.

So let's go back to the documents passage we just worked on. Let's bend the tree *way over into* the "easy-to-read" area:

You have papers. You use these papers in your work. Some of these papers say something that we wouldn't want an enemy to know. Papers like that are called "Classified."

Your supervisor has told somebody to put numbers on all classified papers. The person who is to do this is the control center clerk. Look over your classified papers. Do you find any that are not numbered? If you do, get the control clerk to put a number on each one.

When you finish with a classified document, you may want to send it to somebody else. If he works in the same control area you do, just give him the document.

If he works in an area that has a different control clerk, give the document to your control clerk first. Then you won't be charged with this paper any longer, the other man will be.

Maybe that is first-gradish, but this drastic technique will help you erase a bad habit, and to develop a good habit.

Rules For Busy People

It is hard to change a habit, or to improve a technique. There are many good books on how to improve your writing. If you apply all the rules they suggest you would notice a big improvement in your writing. But they give you *too many* rules!

The authors are so anxious to make you perfect that you don't even try to apply what they tell you. You read, and you forget. Then you go on writing in the same old way. You don't know where to start to improve. You feel lost, discouraged.

But there's real help in those three simple rules. Memorize them. Maybe you'll want to type them and paste them to your calendar pad. You can apply these rules starting today:

1. *Use short sentences*

2. *Use simple words*
3. *Use the straight order*

There's only one way to apply those rules, just one way that really works. Write your first draft *in your present style*. Bang it out quickly, in the same old way. Then apply these three rules to that "quickie" draft. Blue-pencil your first draft, and then consciously apply those three rules.

Caution. If you try to apply any rules *while* you write the first draft, you'll tie yourself up in knots.

Sometimes you will be up against a writing deadline. What then?

Grind out the procedure in the same old way. Don't worry about it. On the next procedure you may have a little more time.

But on the next go, slam out the first draft in the same old way. Then apply our three rules *to the draft*. Maybe in six months, maybe in a year, you'll notice a change, even in your first drafts!

Your *habit* will be changing. Your style will be improving, sub-consciously. Don't expect to change a habit of years' standing in a week or two. But keep changing your *drafts* and you'll start to change your writing habits for the better. **s/p/a**

Worth Reading

"The Benefits of Batching," Ralph W. Fairbanks and Jerome Hoffman, *Office Management*, October, 1957.
Suggests separating simple and complex tasks and installation of procedures to use temporary, unskilled help on simple tasks. Makes it easier to meet peak loads and increases productivity.

"Files Without Filing," *Modern Office Procedures*, September, 1957
Describes Continental Bank's system for rough filing 10,000 ledger-type cards by toothed edge coding each card. Cards are rough sorted by groups into trays; push buttons raise desired cards.

"How We Practice Integrated Data Processing," Matthew R. Parisi and John McPeak, *N.A.C.A. Bulletin*, September, 1957.
Describes Security Steel Equipment's order processing system with a Flexowriter using customer and product edge-punched cards to type constant information, such as name, address, customer code, product code and product description. Tells how three by-product tapes are used to prepare invoices; to make up tabulating cards used to supply order analysis reports; and to prepare three reports: a sales analysis by customer, city, state, territory, a detailed sales listing for inventory purposes, and an analysis of gross profit by item.

"Organization and Staffing," L. L. Purkey, *Office Executive*, October, 1957.
General remarks on manpower controls and performance standards. Author has 25 years of experience in this area with Standard Oil of California.

"We Solved Our Analysis Problem," Anthony R. Carbone, *The Controller*, September, 1957.
A small toy company, manufacturing eighty items, needed two daily and four weekly reports. After investigating several ways of producing the reports (columnar spread sheet, multiple posting machine, posting on bookkeeping machine, billing machine, electronic data machines and marginally punched cards) they installed a Unisort

continued

system of marginally punched cards for $300. Forms and report format are shown.

"Here's Proof Your Office is Overstaffed," *Management Methods*, September, 1957.
Describes Budd Company's use of punched tape and a Flexowriter in billing. Two by-product tapes are prepared when the invoice is typed. One tape is used for a daily sales register and an accounting distribution, accounts receivable ledger, and monthly statements. The second tape is used for a cost-sales analysis by part.

"Computer Does Pabst's Sales Accounting," Murray F. Hepple, *The Office*, Sept. 1957.
General description of various reports Pabst Brewing Company gets from its Univac. Some detail is provided on order processing; about 4,000 orders are handled monthly.

"Western Union's Wire Services and IDP," A. E. Frost, *Office Executive*, Nov. 1957.
Describes new developments in Western Union equipment. Detailed illustrations are drawn from machine applications in U. S. Steel, American Steel & Wire, and Pittsburgh & Pennsylvania Railroad.

"How To Trim Dollars From Your Telegram Costs," Frank K. Greisinger, *Management Methods*, September, 1957.
Detailed program and suggestions for saving 20 to 40 per cent in telegram costs, listing 13 editing rules.

"National Lead Company's Order-Billing-Inventory System," J. W. Ferguson, *The Office*, November, 1957.
Prepunched master card files of customer and product are matched against an order. Variable quantity is inserted for each order. A five-channel tape is then made. The tape produces a nine-part invoice form and an eight-part warehouse order simultaneously. At 4 P.M. each day, transactions are processed by a Univac and inventory is updated by 5 P.M.

Computer C

► The first step in the development of the new electronic system is a study of the proposed flow of work effort and documents and the required changes in organizational structure and responsibilities. During this period the foundations will be established for providing internal control under the integrated system and the internal auditor must be vitally concerned with what is taking place.

The auditor cannot lose sight of the fact that a vast area of the organization will remain outside the immediate electronic sphere. The system of internal control must continue to function in those areas as before. A study of the system flow charts and summaries of the new procedures should be made by the auditor and based on his review, his overall knowledge of his company's operations, and his experience and professional training, he should be in a position to make whatever suggestions are necessary to provide reasonable internal controls in the organization.

An electronic system generally results in centralization of certain functions and a reduction in the number of clerical personnel in accounting operations. The stress upon segregation of duties may tend to decrease. Nevertheless, the auditor can still make certain that, wherever possible, proper division of duties does exist. Procedures can be established for sound business practices at the machine console.

r Controls

By Charles E. Grody, General Auditor, New York Life Insurance Company, from Seminar on Organizing and Administering The Internal Audit Function.

Moreover, it is desirable that auxiliary functions, such as follow-up of exceptions and the verification of control totals be performed by personnel independent of those performing the processing.

We will find also a new area of control which, for lack of a better phrase, may be called physical control of data. The nature of data storage on tape requires a carefully planned program for its control. Because large amounts of data may be stored in a relatively small area, we are presented with an opportunity (not formerly practical) to protect data from loss, mutilation and mishandling. This should be a relatively simple control to establish and yet will be of vital importance in the data processing system. Its principal components would be a comprehensive indexing system, a trained librarian and the promulgation of certain rules relating to the authority of personnel to have access to the tape storage files.

Controls in Computer Programs

A review of proposed computer programs will indicate to the experienced auditor, many points at which control totals may be accumulated and verified within the computer. It is vital for the auditor to make certain that such data are accumulated, and it is an intelligent use of the machine's capabilities to have a large part of the verification performed internally. Desirable analyses, heretofore impractical because of the volume involved, now may be within the realm of possibility. Comparisons, arithmetic verifications and editing, formerly completed manually, can be translated into computer instructions and performed automatically, providing that in the development of the computer programs, adequate consideration is given to internal control requirements. Provision should be made when organizing operating routines, so that auditor may be advised of all changes in the computer programs, after he has initially reviewed them.

Hardware Controls

The manufacturers of these machines have built into the equipment certain checking devices which provide controls over the accuracy of its internal operations. The auditor must understand their purpose and capabilities and take them into consideration when evaluating the status of the operation.

Internal control is, after all, a subject in which electronic equipment, human abilities and relationships, and company policy, all are inextricably related to some degree. The auditor must weigh all of them.

Taken together, the development of new systems and procedures and realignments in responsibilities provides an excellent opportunity to build adequate internal controls from the ground up. **s/p/a**

Though simple in theory
LIFO working papers have become complex

LIFO and Conventional Tabulating Equipment

►Various studies have made of inventory valuations and their effect or reported income and there are many different methods of determining an inventory value. As one of these methods, LIFO has greatly increased in popularity in recent years and though the theory is simple, the working papers become more complex as the years go by, particularly if interim adjustments are made to compensate for temporary fluctuations below normal inventory levels. LIFO working papers under manual clerical procedures become a formidable barrier to the efficient handling of the clerical pricing routine, and it seems to me that the time has come when consideration should be given to handling this clerical pricing routine on a mechanical basis. The accounting machine approach eliminates complex and voluminous working papers and substitutes instead, the more flexible punch card records. Another important advantage of handling the LIFO calculations by machines is that the job can be accomplished with a considerable savings in accounting department clerical time without a corresponding increase in tabulating department time.

So, in the following paragraphs, I will outline one of several possible approaches to handling LIFO calculations on conventional type tabulating equipment. Actually, there would be little to write about except for the fact that adjustments for quantity fluctuations below normal inventory levels are usually required in connection with LIFO pricing. As Mr. A. T. McAnly put it in a recent issue of *The Journal of Accountancy*, "The whole idea of LIFO contemplates a normal base inventory. When this normal base quantity is invaded for a temporary period, certainly profits are more truly expressed if the involuntary liquidation situation is recognized as such and provisions are made for the difference

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by J. R. Riggs

between the base stock assigned value and the replacement values upon which selling price levels are predicated." This procedure is sometimes referred to as an "interim adjustment," and is usually made for eleven months of the year. Normally, "LIFO" is adopted on an annual basis to coincide with the fiscal year so no interim adjustment is made in the last month of the fiscal year. Under certain circumstances it is possible to adjust in a subsequent year for an abnormal preceding year end closing quantity but this does not affect the principles of handling LIFO pricing procedures on tabulating equipment.

Following is a brief outline of the tabulating procedures for interim period pricing of LIFO inventories based on a calendar year LIFO period.

1. The following tabulating card files are required:

(A) A "12/31 prior year detail composition" tabulating card file which reflects information as to the base inventory quantity and price per unit and the quantity and price per unit for each year in which there were increments since the year of adopting LIFO, with separate cards for each item, location, etc. This file is reproduced each month and the reproduced cards used as a working card file for operations beginning with step 3 (A) below.

(B) A "Total quantity and value as of 12/31 prior year" tabulating card file containing a separate total card for each item, location, etc.

(C) A "current month inventory" tabulating card file containing a separate card for each item, location, etc. containing the total quantity on hand as of the current period.

2. After balancing the quantities and values in each of the card files to predetermined totals, the first step in the operation is to process the "current month inventory" card file through tabulating equipment to classify and identify each card as follows:

(A) Those representing a reduction in quantity compared with December 31 prior year where the decrease *is not* expected to be replaced before the year end. (Permanent decrease)

(B) Those representing an increase in quantity compared with December 31 prior year. (Increases)

(C) Those representing a reduction in quantity compared with December 31 prior year where the decrease is expected to be replaced before the year end. (Temporary decrease)

(D) Those representing a combination of types (A) and (B) above, i.e. a reduction in quantity compared with December 31 prior year, a portion of which is considered temporary and the balance permanent.

3. After segregating the current month inventory card file into the four groups indicated above, each group is processed as follows:

continued

(A) Permanent decreases—Since no interim adjustment is required on permanent decreases, these cards are matched with the "12/31 prior year detail composition" work file (referred to in 1-A above) so that each "current month inventory" card is followed by the detail composition cards for that particular product and location. The matched card file is then processed through an electronic computer where the current quantity in each lead card (current) is read in and stored and the detail cards following are extended successively at the various base and increment prices until a quantity equal to the current inventory has been extended, after which further extending is suppressed. The work cards thus extended become the inventory value cards representing that portion of the current inventory items which were considered permanent decreases over December 31 of the prior year.

(B) Increases—No interim adjustment is required on items in this category. The current month inventory cards representing increases are matched with the "Total quantity and value as of 12/31 prior year" card file and processed through a reproducing punch where the total value as of the end of the preceding year is transferred to the current month inventory card. After separating the two files, the current month inventory cards are processed through the electronic computer where the quantity in excess of the previous year end quantity is extended at current acquisition costs and the product of this multiplication is added to the value as of the end of the preceding year thus producing total current value cards for items in inventory representing increases in quantity since the first of the year.

(C) Temporary Decreases—The current month inventory cards representing decreases since the end of the previous year are processed through the electronic computer where the temporary decrease (quantity as of the end of the preceding year less current quantity) is extended at the current acquisition cost and the resultant value deducted from the total value as of the end of the preceding year, thus producing adjusted value cards which recognize that the decrease will be replaced before the year end.

(D) Combination Permanent and Temporary Decrease—Items in this category are processed in the same manner as temporary decreases outlined in (C) above except that the adjustment is made for only that portion of the total decrease that is considered temporary.

After processing the four groups of cards, they are combined and an accounting machine report prepared showing by type of product and location, the total inventory quantity and LIFO value, as adjusted to reflect temporary fluctuations from normal inventory levels.

One point that should be made clear is that the procedure described begins after costs applicable to increments have been determined. It is not a costing technique but, rather, a routine pricing procedure to be applied after product costs applicable to incremental quantities have been determined.

This application is particularly suitable for companies having a number of separate "LIFO" products at many locations. **s/p/a**

S&P
Book Reviews

"Work Simplification," *by Gerald Nadler, McGraw Hill Book Co., Inc., 330 W. 42nd Street, New York 36, N. Y., 292 pp., $6.50.*

Although Work Simplification is an old subject, it is often overlooked in business as a means for operational improvement, Professor Nadler of Washington University, St. Louis, presents the subject as a whole in a capsule form for easy understanding and application.

Work Simplification is defined as "the systematic analysis of any type of work to: 1. Eliminate unnecessary work; 2. Arrange remaining work in the best order possible; and 3. Make certain that the right method is used.

The seventeen chapters in the book cover such subjects as: Getting Started, Process Charts, Multi-Activity Charts, Analyzing Non-repetitive Work, and Designing, Reviewing and Installing the New Method. Throughout the book, many illustrations explain the subject and help put it across. For the newcomer in the field of Work Simplification, this book serves as a good introduction.

Whole-Dollar Accounting, *Controllership Foundation, Inc., 2 Park Ave., New York 16, N. Y., 335 pp., $7.50.*

A case study on the advantages, disadvantages and practical applications of whole-dollar accounting. The first chapter sums up the case for whole-dollar accounting as used in 13 leading corporations, each covered individually in succeeding chapters.

"In the broadest sense, whole-dollar accounting means the recording of accounting entries in whole dollars, getting rid of the decimal point and pennies wherever possible and at the earliest practicable point in the accounting sequence."

A general observation from this type of accounting is "increased productivity or reduction in costs of operations logically follow from and are closely intermingled with work simplification, reduction in motion-time factors required to perform specific operations."

The Appendix includes several interesting articles and comments related to "centsless accounting."

"Work Sampling," *by Ralph M. Barnes, John Wiley & Sons, Inc., 440-4th Avenue, New York 16, N. Y., 282 pp., $7.95.*

"Work Sampling is a fact-finding tool: In many cases needed information about men or machines can be obtained in less time and at lower cost by work sampling than by any other means". With the above introduction, the author proceeds to illustrate effectively how work sampling can be used.

Throughout the twenty-four chapters in the book, Mr. Barnes covers such factors at ratio delay, performance sampling in work measurements, random sampling, time standards by work sampling control charts, and practical applications of this technique. The text is illustrated freely with charts, formulas and sample data.

This book is an excellent primer for anyone interested in understanding work sampling and how it can be used. The appendix covers a Table of Random Numbers and a Bibliography on the subject.

by J. J. Macdonell

Management Advisory Services

External and Internal

Address delivered to the Toronto Chapter of The Systems and Procedures Association.

► Management advisory services is a generic phrase which can be used with equal accuracy and aptness to describe the work of both an external mangement consulting group and an internal systems and procedures group. This title fits well the theme of the observations which follow since they are intended to emphasize the close affinity of purpose, the common characteristics and the unique opportunities for team work between external and internal MAS men.

Evolution of Advisory Services

In the thirties, management advisory services as an organized activity was virtually non-existent. A few companies maintained a limited number of industrial engineers and time-and-motion study men on their payrolls and some pioneer management consultants were endeavoring to persuade the public that the phrase 'consulting management engineer' was a more apt description than 'efficiency expert'. Generally, however, management, except in a very few companies, viewed consultants and systems men—external and internal—with indifference or suspicion. Even in the late thirties, management did not seem to evince any great concern about seeking internal or external advice as to ways and means of improving administrative techniques.

The war altered this picture abruptly and permanently. In those days a consultant who could promise to raise production by five percent or even two percent, or who said he could reduce the number of people required to produce any given quantity of an essential commodity and thereby free personnel for other occupations was given an opportunity to prove his claim.

It was in the light of rather complex—and certainly new—factors in the late forties that there came finally to be an awareness on the part of management everywhere that it was not a sign of weakness but rather of strength to retain specialized advisors, both external in the form of management consultants, and internal in the form

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of systems and procedures men. This trend, which became apparent in the latter years of the war, is now reaching full stride.

The first consideration is the objective of management advisory services. Regardless of whether such services are being rendered by outside consultants or by internal procedures and methods groups, the objectives are the same, namely, to provide management with objective, accurate and expert advice and assistance in analyzing and solving problems and in securing the most effective results for the good of the business, its shareholders, its customers and its employees.

If we consider the method of carrying out assignments, we find that the approaches of external and internal groups are very similar. Practically every project, or assignment divides itself logically into the phases of survey, design, installation and inspection. In addition, internal methods groups usually act as consulting advisors to various sections of the organizations of which they are a part, in the same way that external consultants find that much of their time is spent consulting with and cross-checking the ideas of their clients even when no major project is involved.

The problems associated with both the administration and operation of external and internal groups are certainly of the same mold. For instance, both external and internal consultants must be good salesmen since they are constantly selling ideas to other people. The problems of maintaining a high quality and standard of work is the same—both externally and internally. The difficulties of attracting and retaining good men is certainly not a problem exclusive to either group. Developing and maintaining up-to-date and comprehensive research facilities is a problem faced by all consultants, whether they operate for the benefit of one company or many.

Having dwelt upon the characteristics common to both types of consultants —external and internal—it may be useful to consider a few points which distinguish them one from the other. Possibly, the first and the most important distinction is that an outside consultant, per se, must possess complete independence and objectivity. This is not to infer that internal systems and procedures men may necessarily be influenced unduly by internal factors in considering a problem. But even the most independent of internal consultants at times cannot help but be somewhat conscious of the occasional 'sacred cow.' The outside consultant usually does not recognize a sacred cow if he is confronted by one and even if he does see one he is not obliged to be particularly concerned about it. This might seem to be a disadvantage but in fact it is a great advantage. Consultants, of course, whether external or internal, must tell the honest, unvarnished truth as they see it to be worthy of their calling.

The wise and experienced client quite naturally and properly relates the cost of consulting advice to the results produced and usually expects some reasonable estimate of the cost of an assignment before authorizing it. This means that the outside consultant is always extremely conscious of the estimated time allowed to perform a particular engagement; his ability to produce the intended results within the estimated time usually means the difference between a profit or a loss on the engagement. While the internal systems and procedures man may be equally careful in estimating the time for engagements, he is not quite so subject to certain hard economic facts. These are that he will be 'in the red' financially if he underestimates a job; that he will probably not get the assignment if he overestimates it; and that he will risk certainly his reputation if he fails consistently to produce top-quality work in his engagements.

continued

Another point of distinction between internal procedures men and external consultants sometimes arises because of the attachment of a systems and procedures unit to a specific department such as the accounting or the engineering department. Under these circumstances, other departments requisitioning the services of the internal procedures group may consider that their projects receive a somewhat lower priority or that their problems are viewed with a less detached viewpoint than is desirable. In other words, internal methods groups may sometimes find it a bit difficult to cross departmental lines of organization with adequate facility. External consultants, on the other hand, rarely, if ever, encounter such problems, since by the terms of their engagement it is generally stipulated that they may review any or all areas which are deemed necessary in the execution of the project for which they are retained.

It is rare for outside consultants to be engaged without the direct and specific approval of the highest level of executive management. Indeed, depending upon the nature and scope of the particular assignment, the outside consultant is often engaged directly by executive management, sometimes on the recommendation of one or more department heads. For this reason, top management is keenly interested in the consultant's work, and usually he has direct right of access at all times to the senior executives. Desirable though it may be, this is not always possible for internal methods units.

It must be stressed that there are always exceptions to these generalizations. But, by and large, a well-balanced external MAS group of reasonable size will possess collectively a considerable diversification of skills and experience. Members of such groups are constantly engaged in meeting all sorts of extraordinary problems in a wide variety of businesses. This inevitably tends to produce a somewhat broader base of experience than can usually be obtained by working in an internal methods group, even in the largest companies. Also, it is usually possible for an external group of reasonable size to afford a wider degree of expert skills than may be required—or may be obtainable on a full-time basis—in the average internal group, unless the company is very large.

Areas of Advisory Service

Many types of assignments and projects are common to both external and internal management advisory service groups. A few, selected more as a representative group than necessarily as a comprehensive list, would include:—

1. Studies in departmental organization.
2. The development of management planning and control procedures, including budgetary control systems, standard cost systems, etc.
3. Projects leading to methods improvement through work simplification techniques.
4. The development of procedures for new or revised operating or administrative conditions.
5. The operation of what might be termed 'preventive maintenance systems' including such aspects as forms control, periodic systems reviews, etc.

In the larger companies, which can afford sizeable and well-balanced procedures and methods units, the foregoing types of projects can be and are being performed successfully by such units. On the other hand, smaller businesses which cannot afford the variety of skills possessed by large internal systems and procedures units, frequently employ outside consultants.

There are certain classes of work for which external consultants are particularly well-suited, in both large and small com-

panies. Some of these types which, again, may be considered as a representative group rather than a comprehensive list, would include:—

1. Management organization structure. In any study of the management organization structure, and especially at the level of executive management from the chief executive down, the detailed and objective viewpoint of the independent outside consultant is usually an advantage.

2. Projects that cross departmental lines. As indicated earlier, depending to some extent on whether the internal procedures and methods unit is identified with any one department, the services of the external consultant are frequently well-adapted to projects involving more than one department.

3. Projects involving major policy decisions, large capital expenditures, or conditions requiring extreme secrecy. Projects or assignments in which these conditions apply are often given to external consultants, sometimes at the suggestion or even the request of internal procedure units. Samples of this type of work may be: a recommendation to the Board of Directors to purchase or rent an electronic computer, usually involving a large sum of money; the study of a sick business or a sick division of a healthy company; executive compensation studies; studies which may lead to the acquisition of other companies or mergers with other companies. These examples will give a general idea of the types of situations where the services of external consultants are especially suitable, even when well-qualified internal methods groups are available to do the work.

4. Projects involving highly-specialized techniques or knowledge. Depending on the variety of skills and experience available in the internal methods group, outside MAS groups are frequently in a position to supply highly specialized or technical knowledge which the average internal group could not attempt to utilize on a full-time basis the year around. Examples of this might be in the field of electronic data-processing, operations research, and certain types of industrial practices, such as production control, play layout, materials handling, etc.

5. High priority projects. From time to time internal methods groups may find their forward work schedules so heavy that it is impossible to take on additional assignments and complete them within a reasonable period. Under such circumstances it is practical, and often desirable, to engage outside consultants to undertake such engagements, thus avoiding serious disruption in the planned work program of the internal methods group and the necessity for the department interested in the project waiting unduly for action.

Work for Internal Groups

Similarly, there are certain classes and types of work that internal methods groups are peculiarly well adapted to perform. Among such, may be included the following:—

1. Projects involving lengthy and detailed fact-finding. Generally it is possible in a survey to diagnose the problems within a reasonably short period of time, but occasionally problems are encountered where it is necessary to engage in fact-finding of a relatively detailed and meticulous nature. Under such circumstances it sometimes proves expensive for outside consultants to undertake this part of the work. In fact, some outside consulting groups are reluctant to accept this type of work, because they are not organized to do it and prefer to rely on client's staff to perform such work. Also, they find that the intimate knowledge of existing routines possessed by company staff, including internal methods groups, may enable them to accomplish the work more expeditiously.

continued

2. Detailed design and installation work. The majority of projects involving extensive detailed design and requiring a comprehensive installation program, are under certain circumstances, better undertaken by internal methods groups than by external consultants, although the most practical arrangement is nearly always a pooling of the resources of both external and internal groups.

3. Projects of a continuing nature. Programs involving almost continuous work are usually better assigned to internal methods groups than to external consultants. Examples are the maintenance of a forms control program, the maintenance of an organization manual or a procedure manual, and representation on various internal committees.

4. Projects involving temporary administrative responsibility. From time to time situations arise in administrative departments where experienced assistance is needed either to aid during an emergency period or to provide supervision on an acting basis. In such situations it is not often that an outside consultant is in a position to carry out the responsibilities as effectively as a well qualified member of an internal methods group.

The Team Approach

Having considered both the common and the individual characteristics and fields of service of external management consultants and internal procedures and methods groups it may be useful now to discuss the benefits of a team approach.

Unquestionably, there are many undeveloped opportunities for outside consultants to work effectively and harmoniously with internal procedures and methods groups to the general benefit of the company concerned. There can be no doubt that each group has its place in business today. Each has its clients to serve. In the case of the internal group they are the various levels of the company's management. In many cases internal methods groups act very much like outside consultants in relation to individual departments of the same business. The outside consultant also has many clients to provide for and tries to serve them all honestly, efficiently and sincerely. Each type of group has resources unique to itself. The outside consultant possesses complete independence and a highly detached viewpoint. Frequently he has at his disposal a variety of specialized skills that can rarely be afforded in an internal methods group.

Equally important and valuable, the internal methods group possesses an intimate knowledge of its own company's affairs and activities. It already has the "feel" of internal organizational situations which an outsider must take time to acquire. It is not under quite the same economic pressure of working within target fees and estimates and thus can afford without difficulty to devote the required time and attention to solve unexpected problems and difficulties as they arise. It nearly always has somewhat greater flexibility in planning and scheduling work. It already has the confidence and support of management.

With such an excellent basis for good relations it is surprising from time to time to learn that some internal procedures and methods men may resent what they regard as the intrusion of external consultants into their territories. Also, some consultants do not confer nearly as much as they should with internal groups. When this situation exists, it is usually either because of some unfortunate experience when an external consultant failed to take advantage of and appreciate to the full the valuable help that can be given by internal consulting groups, or when the internal methods group is inclined to feel that it may be considered to be a reflection on its own abilities if management has deemed it advisable to use the services of an out-

side consultant. The external consultant who "goes it alone" without benefit of collaboration with the internal group—and the internal group which resents the outside consultant when there is a real need for his services—will usually be surprised and delighted to learn of the solid progress and smooth relationships that can be achieved if there is a genuine desire and effort on both sides to work as a team.

A practice which some internal procedures and methods groups are commencing to adopt is one which exemplifies perfectly the manner in which a blend of the resources and skills of the external and internal consulting groups can be achieved with maximum results at minimum cost. Briefly the plan is this. This director of the internal procedures and methods group ascertains the nature and qualifications of consulting services available to him from which he selects one consulting firm, the resources and skills of which he feels would blend best with his own group. He then seeks from management an authorization to retain the services of this management consulting firm for a maximum stipulated sum. The use of the consulting services will be at the discretion of the director of the internal group. In due course, a good working relationship develops and projects on which the internal group are involved are usually submitted to a member of the outside group for review to ensure that no points have been missed or that some new approach has not been overlooked. The full skills and research facilities of the consulting group thus become available at a cost which often may be considerably less in a year than the annual salary of even a junior employee in the internal methods group. On proposals submitted to management the simple statement that the proposal has been reviewed, and is concurred in, by a reputable outside firm of consultants can often be of help in gaining its acceptance by management.

The phenomenal growth which has taken place in the past decade or so in management advisory services—external and internal—gives every evidence of continuing. Management seems clearly aware that one of the important frontiers in which further striking advances are possible is in the area of administration. The accession to responsible managerial positions of men conditioned to accept—and indeed to require—the most modern types of administrative controls and facilities is opening up whole new areas of opportunity for management advisory services.

No discussion of the future outlook for business administration would be complete without at least some mention of electronics and office automation. There need now be no doubt in the minds of even the most skeptical of businessmen that electronic computers for the processing of business data are here to stay. In fact, businessmen who have not so far thought seriously of their companies' position vis-a-vis this new concept may be doing their companies a major disservice. Hand in hand with the advent of electronic equipment for data processing purposes is the application of techniques for evaluating alternative courses of executive action in scientific terms known collectively as "operations research." This latter field, while relatively new in terms of years, is capturing the imagination of businessmen everywhere, and some remarkable results are already attributable to the application of these methods to the solution of business problems.

Possibly the single most significant and attractive feature of management advisory services work is the stimulating environment which it creates for men of ingenuity and ability who have the patience, the perseverance, and the intelligence to dream of better ways of doing things and to take practical steps to make the dreams a reality. **s/p/a**

Part II of a three part article which discusses the importance of selecting the proper language in communication

Language Habits That Create C

► The "reports" versus reality relationship will perhaps be most meaningful if specific language habits that cause communication crises are identified. The seven types of language barriers to understanding given here are a fair sample, but do not, of course, exhaust our faulty communication practices.

1. Partial Representation. On January 27, 1957, Secretary of the Treasury George M. Humphrey was asked to explain his views on the "depression that will curl your hair" theme. Reporters on the *Meet the Press* television program questioned the Secretary with a "You said *thus* and *so* on a given date." With excellent grace, and an apparent realization that communicators are easily misinterpreted, Secretary Humphrey at one point replied, "I am often surprised to learn what '*I believe*' when it is reported to me." What occurred, of course, was that news reports tended to minimize other aspects of the Secretary's statement. An abstracted version was offered with the implication that other explanations that might have been given were irrelevant.

The bold cover-page headlines in *Life* magazine on January 16, 1956 announced, "Three Times at Brink of War: How Dulles Gambled and Won." While this partial depiction was supplemented in great detail in the actual article, millions of Americans were nevertheless greatly alarmed. "Taken in the context of the whole article," wrote Editor-in-Chief Henry L. Luce two weeks later, in an effort to calm the storm of protests, "there is nothing in Secretary Dulles' words which is contrary to common sense . . . Nevertheless our use of these particular words in the headlines was unfortunate in that they did not fully reflect the main emphasis of the lengthy conversation which was the Administration's vigorous pursuit of peace." Partial representation can spell trouble.

Why is partial reporting plus inferential notions of completeness harmful in the

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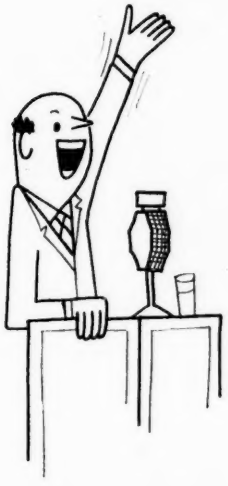
by Prof. William Sattler

te Communication Crises

business situation? Abstracting, to be sure, is important as a matter of economy, but if completeness is implied our listener can charge us with gross unfairness. The consequence: a breakdown at the *understanding*, *acceptance*, and *behavioral change* levels in communication.

Crises occur when the individual can say legitimately, "There are important matters which the boss didn't mention *and yet he implied completeness.*" Recall the occasions when we toss a written report aside with disdain because we are irked by the failure of the report to mention what we look upon as vital—or even to imply that there are other possible significant details. We shall, of course, have to admit that what we say is necessarily an abstract of what might be said about a given matter. But we should be aware of this. We should likewise do our best in reporting the significant factors. This awareness plus an effort at itemizing factors should keep us from reporting "some" details in a manner suggesting completeness.

2. Allness Words. The executive is expected to communicate clearly as well as provide the proper stimuli to motivate others to high accomplishments. He must do so or, as Clarence B. Randall states, "stand aside and let his chair be occupied by someone who can." Yet when the ex-



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ecutive uses the words "always," "everybody," and "everything" when life facts show *some*, or *20 per cent*, or *50 per cent*, he is clearly stretching the truth.

But there is also likely to be a "snapping back" to this stretching process. What occurs then is verbal argument in which listeners counter with opposing allness terms, unexpressed emotional antagonism, and possibly, let us hope, a return to reality —a return to the situation rather than the world of reckless symbolization. In the latter event the language used will center on specifics such as itemizing, quantification and qualification.

Executive John Jones once was told by his superior Mr. Black that he was "always bucking the decisions of the group." Jones, at least in his objective moments, knew that this was not an accurate statement and that Mr. Black should have said "twice in the past month." Following this language of allness the behavior of both executives solidified; each person carried in his head the idea of "I am always right." In this case there is clearly something more than allness involved, for we also have the questionable inference that opposition to decisions in the decision-making stage cannot possibly be "loyal opposition."

Time and perhaps soul-searching and prayer ultimately healed the breach between the two men. But the *allness* label and the apparent inability of Jones and Black to free themselves from this symbol, and therefore to see the facts before them, caused a needless misunderstanding.

Do speakers and listeners, as some of us might say, realize that sweeping generalizations are simply exaggerations? Do they have a private understanding to the effect that "always" really means "twice?" Sometimes this is true. Often enough, however, no such understanding exists and we thus create needless resistance in receivers of messages by false-to-fact language.

3. Inferences and Value Judgments. President Eisenhower in February 1956 presented what many Americans regarded as a frank appraisal of his state of health following his convalescence for coronary thrombosis. During the same months newspapers carried the reports of news commentators concerning the Eisenhower-Anthony Eden conference, and as one might expect, references to Eisenhower's health. The "reports" appeared on the same editorial page and on the same day. Commentator A said: "The President seemed to tire noticeably and was glad when the sessions were over." Commentator B perceived the situation in this fashion: "Eden . . . has never seen the President so vital, zestful, so stimulating in discussion." These of course are opinions or inferences that commentators are entitled to state, but they are not facts. It may be however that commentators A and B, and many readers as well, cannot tell the difference between inferences and facts.

Skill in inference-drawing is a significant attainment. Yet, remember, our inferences are ever subject to error, and our listener will bristle with animosity if we habitually make inferences without first giving detailed attention to facts. Inference-proneness is moreover like thinking in reverse, voting first and discussing later, or prescribing remedies prior to diagnosis.

Gambling Against Odds

When we make split-second inferences we are in effect engaging in gambling operations under unfavorable odds. What we say is verifiable if we find that John committed an error (*a fact*). Yet look at the possible inferences: (a) John didn't listen to instructions; (b) He needs training; (c) He is not interested; (d) He is not giving sufficient time to this phase of his work; (e) He is worried about items x, y, and z. If we confront John with one

of these or possibly other inferences, we often find that we have jumped to a conclusion which John vigorously denies. We do not achieve a good working relationship by trying to convince John that our interpretative inference is right and that his is wrong. Soon, we find, that in our arguing about inferences we will unconsciously elevate probable inferences to the level of facts. From this there is likely to be no retreat, nor mutual understanding.

Pronouncing value judgments is a special type of inference-drawing which evaluative man tends to do in virtually all situations. Many times he does so quite properly. But judgment-making, when done unwisely or too frequently, introduces a barrier to acceptance, and likewise throttles creative thinking by subordinates. This is true because assessing goodness, correctness, or preferences by a superior settles the issue—a verdict has been given that is fair at least in the eyes of one person.

For example: Student A is not *lazy* simply because he asks to be excused from taking Course 300—two of his "required courses" may be scheduled at the same hour; subordinate B is not necessarily a *dead-beat* merely because he failed to keep an appointment—he may have a legitimate reason; and manager C is not *egotistical* if he fails on occasion to greet his employees—he could at these times be pondering helpful plans for employees. While it is probably true that we shall entertain such value judgments, depending upon our moods and inclinations, we will be better *factually oriented*. We will moreover not become victimized by symbols that have a questionable validity except in so far as they conform to personalized feelings. And most important, we keep the road to productive communication open by exercising a reasonable delay in "jumping to conclusions."

4. Two-Valued Words. The engineer, scientist, or statistical worker plots degrees of difference which in some cases show hundreds of points on a continuum. In contrast to this practice, however, we find that many of us simplify differences by resorting to the use of antithetical extremes—good and bad, black and white, loyal and disloyal. These classifications—of doubtful validity in the first place—thereafter condition our thinking.

"Fear of Failure"

"Don't teach the fear of failure," said Charles F. Kettering, "how to escape responsibility, or symbols instead of things." A symbol, as we have seen, does not have a necessary correspondence to the external world, as indeed it rarely does when we clumsily lump items into a twofold classification. Apart from the confused thinking that two-valued language suggests, listeners often object to our dual classification system when reality indicates that there should be three, or possibly even thirteen classifications.

One does not have to search far to discover how often we indulge in two-valued logic: (a) The Athenians divided humanity into two classes, the Athenians of course and the barbarians; (b) Aristotle remarked that whatever is done is done freely or under compulsion; (c) Lord Chesterfield said that the object of marriage is either love or money; and (d) Charles Lamb held that "the human species is composed of two distinct races, the men who borrow, and the men who lend." These classifications are interesting, possibly amusing, and also probably untrue. Smile if we will, but while we do so we might check our daily communications to see if we are also addicted to the two-valued disease.

When Secretary of Defense Charles E. Wilson in 1954 made the reference to *bird dogs* and *kennel-fed dogs* a verbal battle was quickly ignited. Apart from the effects of the analogy as word imagery, the

classification is two-valued and as such implies that all workers fall into one class or the other. It is doubtful that many of us recall that his reference had to do with 110 men who were scheduled to be drafted from a specific district. With the reduction of the draft quotas following the Korean War, these young men now would be added to the labor force in what was a labor surplus area. Wilson believed that the 110 young men should be willing to travel as far as 100 miles for a job.

Secretary Wilson's intentions were of no avail as our news media poured forth charges that the Secretary showed callous indifference toward the unemployed. The two-valued labeling plus the emotional connotations of his labels kept misunderstandings, claims, and counter-claims in the limelight from early October until the November elections.

5. Giving Words Static Meaning. When we associate a rigid meaning to words we may delude ourselves into thinking that the world of fact is changeless. Many of us develop a stereotyped picture of management, labor, and department X, and consequently we are unable to keep up to date on changes. Soon our meanings for words become nothing more than emotional preferences which our listeners reject.

The antidote, says the semanticist, is to use *index numbers* and *dates* to show differences and the passage of time. Rather than a false-to-fact picture of Sales Department, we should gear our meaning to Sales Department 1957 or projected Sales Department 1960.

Likewise the pictures inside our heads will be improved if we distinguish Salesman 1 and the situations he faces from those of Salesman 2. Such a pattern of thinking permits us to be accurate users of labels; and furthermore our dates and index numbers individualize communication in a way that listeners have a right to expect.

It is helpful to look upon others as persons who are capable of changing in personal outlooks, interests, and skills. We should reveal an awareness of these signs of personal development when we communicate with others. John 1957 is not the same person as John 1952—and he wants to be treated in a fashion consistent with the world of facts as per 1957.

What does *Republican* mean, or perhaps *New Republicanism,* or *Democratic?* Certainly meanings change. We cannot, for example, apply the 1900 sterotype of executive to a great many present-day executives.

A look at history: In Old English *soon* meant "at once", but now the word has a different meaning; *rash* meant quick or swift, and now means foolhardy; *silly* meant happy, *villain* a peasant subject to a lord, *marshal* a horse-servant; and *strike* meant "to stroke" or "rub gently."

28 Meanings Per Word

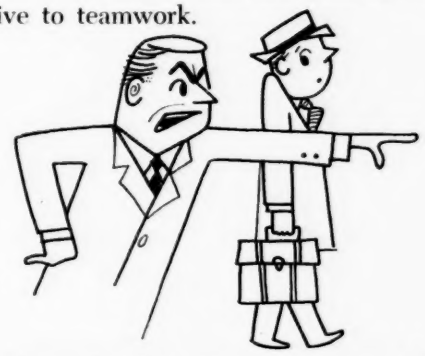
6. The One Word—One Meaning Fallacy. In addition to the changes in the world of facts which our words must keep pace with, we must also remember that words—except technical terms—have a variety of meanings. According to Charles C. Fries, the Oxford Dictionary records 14,070 separate meanings for the five hundred most-used words in English, or an average of 28 separate meanings per word!

We meet this problem in part by revealing our intent through the context of our statements. Yet many of our words such as "*edit* the report," "get the *survey* in," and "send an *introductory letter*" do not achieve clarity by context. We can achieve mutual understanding only by particularizing, or better still, by inviting the listener to feed back his interpretation of the message. "Explain some more," "Is this what you mean?" and "As I see it" may be helpful devices to use if mutual agreement is to overcome private notions of meaning.

The hazards of a routine one word–one meaning pattern of thinking was illustrated in the reports issued by commanders of replacement depots just prior to the World War II "Battle of the Bulge." Numbers of troops were classified at replacement depots as *assigned* and *attached* personnel. Now *assigned* personnel meant troops who operated replacement depots, and *attached* personnel meant "troops waiting to be assigned to combat units." Some time earlier however replacement depot commanders were given permission to use 200 attached troops per battalion to operate the replacement depots. These men were listed in the *attached* column of the daily reports, but actually they were not available for combat duty. The reports of *assigned* and *attached* personnel were technically correct, but they did not convey the true facts. When replacements were needed it was discovered that the number was far short of the number revealed in the daily reports. Consequently, "the Allied High Command had to muster every available noncombatant soldier into emergency units to stem the German tide."

After Charles F. Kettering perfected the self-starter an engineer at a meeting of the American Institute of Electrical Engineers said: "No wonder you made your self-starter work; you profaned every law of electrical engineering." Kettering protested by saying that he did not profane any fundamental laws of electrical engineering. "Those laws," said Kettering, "had nothing whatever to do with self-starters; they were written for something entirely different." We see, then, that for Kettering the words used to express the fundamentals of electrical engineering had a meaning different from that entertained by another reader of the laws.

7. Insult Words. The harmful consequences of "emotional erosion" as explained by F. F. Bradshaw in *Advanced Management*, November 1955, are in part caused by the insult labels we use. Often when we are thoughtless, frustrated, or incensed by others, and especially when we look upon others as pawns to be manipulated, we use words which stigmatize others. And to a greater or less degree we shall probably continue to do so, even though objective particularization is a better plan to follow if we seek to enrich human associations and the climate conducive to teamwork.



Insult words refer not only to name-calling techniques, but also to the attitudes of indifference, cynicism, and antagonism that we reveal when we engage in split-second contradictions. When we dismiss the views of others before we understand them we show little respect toward these persons. In effect we say, "You're crazy–a fool"; and, in turn, our listeners react with, "You're another . . ." Weeks later, perhaps, we confess that we didn't understand the speaker's meaning.

President Eisenhower reports that "hoots and jeers" greeted Admiral Mountbatten's 1942 suggestion that it might be necessary to construct artificial harbors and tow them to the coast of Normandy. "But two years later," as we now know, "it was to become a reality." The split-second contradiction reflected by scoffers would have doomed the proposal–open-mindedness and delayed judgment by some of our military leaders made it possible for the non-obvious solution to have a fair hearing. **s/p/a**

Next issue: Part III, "Semantic Noise" Applied to Speakers and Listeners.

An editorial

Lengthening a Man's Arm

► WHEN PRIMITIVE MAN FIRST LASHED A STONE TO A STICK OF WOOD and made a crude hammer, he had succeeded in lengthening his arm. From this time forward the manual tasks of pounding, chipping, hammering, striking, etc. would be easier to perform—or to put it another way, man could get more work done within a given period of time.

Man had used his head to lengthen his arm. Later advances in the field of manual work, such as the lever and the pulley, and more lately the pushbutton have continued to lengthen man's arm so that each shop worker within his normal workday can accomplish a prodigious amount of work, by comparison with what his output would be without the use of these tools to lengthen his arm.

The clerical worker scarcely existed before some kind of tool was invented to give his occupation a meaning to society. The ancient scribes needed wedges to impress cuneiform figures into clay tablets, or styli for scratching hieroglyphics onto papyrus.

For eons after these methods of writing were invented, little or no progress was made in lengthening a man's arm so that he could write faster or could make more than one copy at a time. Then in the 15th century printing from movable type was invented. This helped to solve the need for many copies of a particular document—but the cost of setting type was then and has continued to be too great to make it justifiable economically to use this printing method to reproduce something of which only a few copies are needed, such as a business letter or report. Scribes still copied these out long-hand in single copies until copying ink and the copy-press were developed along about the 17 and 1800's, making it possible to dampen the original document and transfer the writing onto the back of a sheet of translucent paper.

Then around the turn of the century came the development of the typewriter, carbon paper, gelatin and spirit hecto duplication, stencil duplication, offset duplication from typed paper mats, the diazo contact printing method, etc.—and then the paperwork flood began to rise.

Today it has reached the point where the term paperwork has almost an evil connotation to the business executive. Someone has to remind him that paperwork, like fire, is a good servant but an evil master. Through paperwork he can lengthen his own arm so that the acts he cannot perform personally, because of the size of his business, will be carried out promptly and efficiently by his employees in accordance with the policies and procedures which he has set forth. By fast and cheap production of numerous copies of a single paper, one writing of an order or report can serve many purposes.

Without paperwork today's huge industrial and commercial organizations could not exist. Man's arm has truly been lengthened through the use of paperwork. The systems man's job is to keep this valued servant under control so that he does not rise up and strangle his master. **s/p/a**

THE EDITORS

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